(Adopted October 26, 1984)(Amended October 4, 1985)

RULE 1110.1. EMISSIONS FROM STATIONARY INTERNAL COMBUSTION ENGINES

(a) Definitions

For the purposes of this rule, the following definitions shall apply:

(1) A Stationary Internal Combustion Engine (engine) is any spark compression ignited reciprocating internal combustion engine that is attached to a foundation at a location or is portable and operated at the location for more than one year, not including engines used for self-propulsion.

(2) A Rich-Burn Engine is a spark-ignited, Otto-cycle or two-stroke engine that is operated with gaseous fuel as defined in Rule 431.1 and with an exhaust stream oxygen concentration of less than 4 percent by volume.

(3) A Lean-Burn Engine is a spark-ignited, Otto-cycle or two-stroke engine that is operated with gaseous fuel as defined in Rule 431.1 and with an exhaust stream oxygen concentration of 4 percent by volume, or greater.

(4) An Existing Engine is an engine that prior to October 26, 1984:

(A) Has been issued a valid permit to construct or operate by the District, or

(B) Is in operation pursuant to the provisions of District Rule 219(b)(1), or

(C) Is subject to review due to submittal of an application for permit to construct or operate which has been deemed complete by the Executive Officer.

(5) Rated Brake Horsepower is the rating specified for the engine by the manufacturer.

(6) Cyclic-Loaded Engine is an engine that under normal operating conditions varies in shaft load by 40 percent or more of rated brake horsepower during recurrent periods of 30 seconds or less, or is used to power an oil well reciprocating pump unit.

(7) Emergency Standby Engine is an engine which operates as a temporary replacement for primary mechanical or electrical power sources during periods of fuel or energy shortage or while primary power source is under repair.

(8) A Stationary Source is one or more parcels of land, on which engines are operated, in actual physical contact or separated solely by a public roadway or other public right-of-way and is owned or operated by the same person (or by persons under common control).

(9) Shaft Output is the actual engine work done (brake horsepower hour or joules) calculated from measurements and data taken from operating parameters and performance curves of device being powered by engine.

(b) Applicability

The provisions of this rule are applicable to the following engines:

(1) All engines with more than 50 rated brake horsepower shall comply with subparagraph (c)(3).

(2) All rich-burn and lean-burn engines over 200 rated brake horsepower in Los Angeles and Orange Counties, at any stationary source which has more than 2000 maximum total rated installed brake horsepower of such engines shall comply with paragraph (c) in accordance with the compliance schedule in paragraph (d). The compliance date for all those engines at stationary sources with 500 to 2000 total installed rated brake horsepower may be deferred until December 31, 1987.

(3) All other rich-burn and lean-burn engines over 50 rated brake horsepower including those not in Los Angeles and Orange Counties shall comply with paragraph (c) by January 1, 1995.

(c) Requirements

(1) Owners/operators shall not operate rich-burn engines unless:

(A) For existing engines, the oxides of nitrogen (NO_X) emission concentrations in the exhaust averaged over not less than 15 consecutive minutes:

(i) Are reduced by 90 percent across the control device in initial tests for engineering evaluation purposes after installation or replacement, and are maintained to reduce emissions by at least 80 percent thereafter; or

(ii) Do not exceed 90 ppm by volume on a dry basis corrected to 15 percent oxygen.

(B) Carbon monoxide (CO) emission concentrations in the exhaust averaged over not less than 15 consecutive minutes do not exceed

2000 ppm by volume on a dry basis corrected to 15 percent oxygen.

(2) Owners/operators shall not operate lean-burn engines unless:

(A) For existing engines, NO_X emissions in the engine exhaust averaged over not less than 15 consecutive minutes:

(i) Are reduced by at least 80 percent across the control device in the initial tests for engineering evaluation purposes after installation or replacement, and are maintained to reduce emissions by at least 70 percent thereafter; or

(ii) Do not exceed 150 ppm by volume on a dry basis corrected to 15 percent oxygen; or

(B) For existing engines controlled exclusively by combustion modifications, the NO_X emissions do not exceed 0.75 microgram per joule output (2.0 grams per brake horsepower hour), or where the engine has no means to measure shaft output the NO_X emission concentrations averaged over not less than 15 consecutive minutes do not exceed 150 ppm by volume on a dry basis corrected to 15 percent oxygen.

(3) The owner/operator of any engines which are subject to provisions of this rule shall submit to the Executive Officer, for his approval, a Control Plan for the reduction of emissions of air contaminants to meet requirements of paragraph (c). Such Control Plan shall include for each stationary source:

(A) A list of all engines with type of engine service and permit or identification number.

(B) Engine manufacturer, model designation, rated brake horsepower, type of fueling (liquid and/or gas), and type of ignition (compression or spark).

(C) List of all engines to be controlled and type of emission controls to be applied to such engines, including construction schedule, except for cyclic-loaded engines of 200 rated brake horsepower or less.

(d) Compliance Schedule

Any rich-burn or lean-burn engine which does not meet the definition in subparagraph (a)(4) for "existing engine" shall be in compliance with the requirements of paragraph (c) at the time of installation. Owners/operators of all existing engines at each location shall comply with the provisions of paragraph (c) of this rule in accordance with the following schedule:

(1) By April 26, 1985, submit a Control Plan pursuant to subparagraph (c)(3) of the rule, except that information required by subparagraph (c)(3)(C) for sewage digester and landfill gas fueled engines shall be submitted by April 26, 1986.

(2) By 8 months prior to the emission limit compliance date for the affected engine, submit application(s) for permit(s) to construct and operate. Negotiate and sign contract for emission control equipment.

(3) By 2 months prior to the emission limit compliance date for the affected engine, initiate installation of control equipment.

(4) For rich-burn engines have under compliance:

(A) No later than December 31, 1985, all engines with over 500 rated brake horsepower.

(B) No later than December 31, 1986, 75 percent of total installed rated brake horsepower for all engines with 201 to 500 rated brake horsepower.

(C) No later than December 31, 1994, all engines over 50 rated brake horsepower.

(5) For lean-burn engines have under compliance:

(A) No later than December 31, 1987, 80 percent of total installed rated brake horsepower for all engines over 500 rated brake horsepower.

(B) No later than December 31, 1994, all engines over 50 rated brake horsepower.

(6) Notwithstanding the requirements of subparagraphs (d)(4)(A), (d)(4)(B) and (d)(5)(A), and provided a request is submitted pursuant to subparagraph (c)(3), a 12-month delay in compliance schedule is allowed for:

(A) Cyclic-loaded engines over 200 rated brake horsepower.

(B) Sewage digester gas or landfill gas fueled engines.

(C) Engines with two or less power cylinders.

(D) Engines which will be permanently removed from service no later than 12 months from the applicable date.

(7) Notwithstanding the CO limitation requirements of subparagraph (c)(1)(B), and provided a request is submitted pursuant to subparagraph (c)(3), a 12-month delay in the compliance schedule is allowed for engines operated with manual air-to-fuel ratio controls.

(e) Alternative Emission Control

An owner/operator may achieve compliance with subparagraphs (c)(1) and (c)(2) by substituting equivalent NO_X emissions reductions obtained by control of existing engines provided the applicant submits an Alternative Emission Control Plan that is enforceable by the District and receives approval in writing of such Plan from the Executive Officer prior to implementation. Where emission reductions are to be accomplished through the use of a non-catalytic control device that will not degrade over the life of the device, compliance with subparagraph (c)(1)(A)(i) shall be demonstrated if the device can maintain emission reduction by at least 80 percent notwithstanding the control technology's inability to meet the initial 90 percent reduction required by such subparagraph.

The Alternative Emission Control Plan shall:

(1) Contain, as a minimum, in addition to requirements of subparagraph (c)(3) of this rule: all data, records, and other information necessary to determine eligibility of the engines for alternative emission control, including but not limited to:

(A) List of engines subject to alternative emission control,

(B) Daily average and maximum hours of utilization for such engines.

(C) Estimated emission level for such engines with and without NO_X emission controls.

(2) Present the methodology for estimation of equivalency of emission reductions under the proposed Alternative Emission Control Plan as compared to either the emission reductions required by the applicable rules or to actual emission, whichever is less.

(3) Demonstrate to the satisfaction of the Executive Officer that the difference between the emissions allowable by existing regulations and any lower actual emissions will not be used to increase emissions from the same or another source.

(4) Demonstrate that the permit units subject to the specified rule emission limitations are in compliance with or on an approved schedule for compliance with all applicable District rules.

(5) Submit an updated or modified Alternative Emission Control Plan:

(A) Prior to modification of the engine(s) subject to alternative emission control, or

(B) When new or amended specified rules are adopted which regulate the emissions of any air contaminant from the engine(s) subject to alternative emission control.

(6) For plans proposing Basin-wide control:

(A) For source/receptor areas (as defined in Regulation VII) which since January 1, 1984, have exceeded the national ambient air quality standard for NO_2, demonstrate that emission reductions from any facility in those areas will equal or exceed reductions which otherwise would be required by subparagraph (c) of this rule; and

(B) Provide Basin-wide emission reduction at least 5 percent greater than otherwise would be required by subparagraph (c) of this rule.

(f) Monitoring Equipment

The owner/operator of any engine subject to provisions of this rule shall:

(1) Install, operate, and maintain automatic controls as required by the Executive Officer to ensure compliance with the emission limitations of this rule; or

(2) Use analytical equipment and procedures or sensing devices, as required by the Executive Officer, maintained in good operating order, which readily indicates:

(A) For rich-burn engines,

(i) vented exhaust gas NO_X and CO emission concentrations, or

(ii) air-to-fuel ratio setting within tolerance limits as recommended by the catalyst system supplier and approved by the Executive Officer.

(B) For lean-burn engines,

(i) vented exhaust gas NO_X concentration, and

(ii) flow rate of reducing liquids or gases added to the exhaust gases in operation of catalyst NO_X reduction systems.

(g) Exemptions

The provisions of this rule shall not apply to:

(1) Engines used directly and exclusively by owner/operator for agricultural operations necessary for the growing of crops or raising of fowl or animals.

(2) Emergency standby engines, as approved by the Executive Officer, which operate less than 200 hours per year as determined by an elapsed operating time meter.

(3) Engines used exclusively for firefighting services and flood control.

(4) Engines operating with NO_X control retrofit devices or modifications installed under provisions of Rule 1110, provided they are operated with at least as great an emission reduction as the Executive Officer determines was achieved in the Demonstration Program of Rule 1110.

(5) Existing engines operated with LPG (liquefied petroleum gas).

(6) Laboratory engines used in research and testing.

(7) Engines operated for purposes of performance verification and testing.

(8) Engines operating in the Southeast Desert Air Basin portion of Los Angeles and Riverside Counties.